

REMARKS

Entry of the foregoing, re-examination and reconsideration of the subject matter identified in caption, as amended, pursuant to and consistent with 37 C.F.R. § 1.114, and in light of the remarks which follow, are respectfully requested.

Claim 1 has been amended to further recite a conjugate fiber having a concentric sheath-core configuration, in which the core resin has the earliest induction period of strain-induced crystallization. This amendment is supported by the specification, for example, page 15, lines 6 to 11 and page 16, lines 6 to 10. Claims 2, 3 and 8-15 have previously been canceled. Upon entry of the Amendment, claims 1 and 4-7 will be all the claims pending in the application.

I. Response to Rejection under 35 U.S.C. § 102/103

Claims 1 and 4-7 have been rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,274,237 to Nakajima et al.

Applicants respectfully submit that the claims as amended are novel and patentable over Nakajima for at least the following reasons.

Claim 1 recites an extensible nonwoven fabric which is a spunbonded nonwoven fabric that comprises a fiber having substantially no crimps and comprising at least two olefin-based polymers, said at least two olefin-based polymers being of the same kind and having a difference between induction periods of strain-induced crystallization, as measured at the same temperature and the same shear strain rate, of 100 seconds or longer,

wherein among the at least two olefin polymers constituting the fiber, the olefin-based polymer having the earliest induction period of strain-induced crystallization is contained in an amount of 1 to 30 wt% of the fiber,

wherein the fiber is a conjugate fiber having a concentric sheath-core configuration, in which the core resin has the earliest induction period of strain-induced crystallization.

The recited nonwoven fabric can have excellent extensibility in addition to sufficient strength and excellent fuzz resistance. Applicants submit herewith a Declaration Pursuant to 37 C.F.R. § 1.132 by Mr. Kenichi Suzuki, a co-inventor of the present application. The Declaration demonstrates unexpectedly superior results obtainable in the claimed fibers, and thereby further supports the patentability of the claimed subject matter.

In the Declaration, Additional Experiments 1 and 2 were prepared in the same manner as described in Example 11 of the present specification. Additional Experiment 1 is the same as Example 11 except that: (1) Polypropylene 5 (“PP5”) was used in place of Polypropylene 3 (“PP3”) in the core portion, (2) PP3 was used in place of PP5 in the sheath portion, and (3) the core/sheath weight ratio was changed from 20/80 to 50/50. The nonwoven fabric of Additional Experiment 1 does not meet the recitations in claim 1 that the polymer having the earliest induction period of strain-induced crystallization is contained in an amount of 1 to 30 wt% of the fiber, and that the core resin has the earliest induction period of strain-induced crystallization. Additional Experiment 2 is the same as Example 11 except that: (1) PP5 was used in place of P3 in the core portion, and (2) PP3 was used in place of PP5 in the sheath portion. The nonwoven fabric of Additional Experiment 2 does not meet the recitation in claim 1 that the core resin has the earliest induction period of strain-induced crystallization.

The extensibility at maximum load of the resultant spun bonded nonwoven fabrics of Additional Experiments 1 and 2 was tested and the results are summarized in the following table together with the results obtained in Examples 9 to 11 of the present specification:

	Additional Experiment 1	Additional Experiment 2	Example 9	Example 10	Example 11
Core, Polymer type/wt%	PP5/50	PP5/20	PP2/20	PP2/50	PP3/20
Sheath, Polymer type/wt%	PP3/50	PP3/80	PP5/80	PP5/50	PP5/80
Extensibility at maximum load, MD/CD%	60/57	52/35	131/192	128/112	95/89
Note		Component polymer ratio is modified			The core and sheath polymers are opposite

	SIC induction period at 140 °C, sec	MFR, g/10 min	MT, °C	Mw/Mn	Static Tc, °C
PP2	319	30	162	2.8	136
PP3	399	60	162	2.6	136
PP5	>7200	60	138	2.5	114

From Table 1 in the specification.

As can be seen from the results in the above table, the nonwoven fabrics of Additional Experiments 1 and 2 showed far inferior extensibility at maximum load compared to Example 11.

Nakajima describes in Comparative Example 3, which is relied upon by the Examiner, a concentric conjugate fiber having propylene copolymer (co-PP) as the first component (core) and crystalline polypropylene (PP) as the second component (sheath). Nakajima does not describe that the core/sheath polymers have a difference between induction periods of strain-induced crystallization of 100 seconds or longer. Moreover, Nakajima does not

describe that the core resin has the earliest induction period of strain-induced crystallization or the effects thereof, as set forth above and achievable with the claimed fibers.

Further, in the fiber of Comparative Example 3 of Nakajima, the core/sheath weight ratio is 50:50, which does not meet the recitation that the olefin-based polymer having the earliest induction period of strain-induced crystallization is contained in an amount of 1 to 30 wt% of the fiber, in claim 1. The attached Declaration further demonstrates that superior extensibility cannot be achieved merely by changing the core/sheath weight ratio of the fibers described in Nakajima. Specifically, in the cases of Examples 9 and 10 of the present specification, extensibility increases when the core/sheath weight ratio decreases; however, in the case of Additional Experiments 1 and 2, which have a similar core/sheath polymer combination as that disclosed in Nakajima, extensibility decreases as the core/sheath weight ratio decreases.

In view of the foregoing, Applicants respectfully submit that claim 1 is not anticipated or rendered obvious by Nakajima and thus the rejection should be withdrawn. Additionally, claims 4-7 depend from claim 1 and thus are patentable over Nakajima at least by virtue of their dependency.

II. Conclusion

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order and such action is earnestly solicited. If there are any

questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned at (202) 452-7932 at his earliest convenience.

Respectfully submitted,

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